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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/893,421
Filing Date: June 29, 2001
Appellant(s): SALO ET AL.

Salo et al
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed January 26, 2009 appealing from the Office action mailed July 25, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,987,518	GOTWALD	11-1999
5,497,187	BANKER ET AL	3-1996

5,453,797 NICOLAS ET AL 9-1995

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 45-63, 65-89, and 101 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gotwald (5,987,518, of record) in view of Banker et al. (5,497,187) [Banker] and Nicolas et al. (5,453,797) [Nicolas].

Regarding claims 45, 50, 56, 57, 59, 63, 74, 82, 92, 96, and 101, Gotwald discloses a system for delivering content over a hierarchical network comprising a source of content deliverable, to a network (including wireless networks, as the network is any known communication path, col. 3, lines 25-50), the network including head end equipment operable to place content into one a plurality of selected data streams (col. 4, lines 43-54) in response to requests received via a network gateway (the invention is providing internet access, col. 1, lines 36-67), and a terminal operable to receive the data stream (col. 3, lines 51-65), wherein the head-end equipment classifies the content and in accordance with the classification places it into the data stream (col. 4 line 55 – col. 5 line 22).

Gotwald fails to disclose the data streams are corresponding hierarchically modulated data streams that are simultaneously transmitted, wherein at least one of the plurality of hierarchically modulated data streams is configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal.

In an analogous art, Banker discloses placing differently prioritized data into different streams which are simultaneously transmitted, such that higher priority data is in a separate data stream and unaffected by lower priority data which has been transmitted in a separate data stream (col. 11, lines 1-17).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Gotwald to include the data streams are corresponding hierarchically modulated data streams that are simultaneously transmitted, as taught by Banker, for the benefit of separating data streams so that lower priority data will not interfere with the transmission of higher priority data.

Gotwald and Banker fail to disclose at least one of the plurality of hierarchically modulated data streams is configured to have a maximum range greater than at least one other hierarchically modulated data stream that provides an adequate C/N ratio for reception by a terminal.

In an analogous art, Nicolas teaches it was quite well known in the art at the time to place differently prioritized data streams on different portions of the frequency spectrum, granting higher priority data a lower C/N ratio such that the higher priority data has a higher maximum range than lower priority data (col. 4, lines 40-61).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Gotwald and Banker to include placing differently prioritized data streams on different portions of the frequency

spectrum, granting higher priority data a lower C/N ratio such that the higher priority data has a higher maximum range than lower priority data. Since data that has a higher priority is thus more important or urgent than lower priority data, it is beneficial to use a known broadcasting method which ensures that the higher priority data can be received by a receiver even in circumstances where the lower priority data could not be recovered.

Regarding claim 46, Gotwald, Banker, and Nicolas disclose the apparatus of claim 45, wherein a classification of the content is made in accordance with a data type of the content (Gotwald, col. 5, lines 7-16).

Regarding claim 47, Gotwald, Banker, and Nicolas disclose the apparatus of claim 46, wherein Gotwald teaches the classifier is connectable to a data stream of content in the form of data elements (col. 5 line 57 – col. 6 line 3) and a splitter is connected to the output of the classifier (as shown in fig. 4, splitting the data onto output FIFOs) wherein the classifier identifies the data type of each element of the data streams and inserts a marker into said data streams indicative of a priority assigned to the element such that the splitter subsequently places each data element, in accordance with the marker, into a corresponding hierarchical transport stream for subsequent transmission by the network (col. 6, lines 4-13).

Regarding claims 48 and 65, Gotwald, Banker, and Nicolas disclose the apparatus of claims 46 and 47, wherein Gotwald teaches a look-up table accessible in use by the classifier, the table comprising a set of profiles, each profile including a definition of a priority for a particular data type wherein a selection by the classifier of the particular profile for identifying the data type of each element is determined by the network (col. 6, lines 4-13).

Regarding claims 49, 51, 52, 58, 62, 66-70, 75, 76, 78, 80, and 81, Gotwald, Banker, and Nicolas disclose the device, method, and system of claims 45, 50, 51-56, 59, and 60, wherein the hierarchically modulated simultaneously transmitted data streams are ranked in accordance with a predetermined criteria (profiles taught by Banker, col. 11, lines 1-17, or quality of service requirements as taught by Nicolas, the priority of the carrier, col. 4, lines 50-61).

Regarding claims 53-55, 60, 77, 83, 88, and 89 Gotwald, Banker, and Nicolas disclose the method of claims 52 and 59, wherein the network determines the selection profile on the basis of an intended recipient of the content, on the basis of a service providing the content, or on the basis of a network load (Gotwald, col. 6, lines 4-14 where priorities are based on source or destination IP address, and col. 6, lines 34-39, wherein priority is adjusted to maintain throughput [consideration of network load]).

Regarding claims 61, 71-73, 79, and 84-87, Gotwald, Banker, and Nicolas disclose the method of claims 51-54, 59, and 62, wherein the request is received in a return channel established by a terminal of a public land mobile network via a public switched telephone network (Gotwald, standard network 20, fig. 1, col. 3, lines 33-39) and the establishment of one of the profiles is based upon the level of service (Gotwald, col. 11, lines 1-11, where some services are given higher priority than others based on importance), wherein the network is a terrestrial digital video broadcast network [DVB-T] (Gotwald, broadband channel 16, fig. 1, col. 3, lines 48-50).

(10) Response to Argument

A. The Nicolas Document

1. Independent claims 45, 50, 56, and 59

First, appellant makes the argument that Nicolas does not teach a 'hierarchically modulated' data stream, finding no teaching in Nicolas that the modulated signal is done so in a hierarchical manner (appeal brief, page 16).

In response to appellant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, as was argued in the Final Office

action mailed on July 25, 2008, the teaching of hierarchical modulation is found in the Banker reference (Final Office action, page 3), not the Nicolas reference.

Second, appellant argues that "hierarchical modulation does not put data streams on different portions of the frequency spectrum, but rather modulates them in a data symbol stream transmitted on one channel", contending with the examiner's interpretation that one form of hierarchical modulation includes frequency division multiplexing where some streams are given higher priority than others (appeal brief, pages 16-17 and 18-19).

In response to appellant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., hierarchical modulation does not put data streams on different portions of the frequency spectrum, but rather modulates them in a data symbol stream transmitted on one channel) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). In the specification of appellant's application, paragraph 0020 states that data is delivered over a network to a "suitably equipped terminal". The specification then provides an example of what is meant by suitably equipped by suggesting compliance with a DVB specification to provide the necessary return channel. Hence, compliance with a DVB standard is merely exemplary and not a necessary aspect of the claimed invention. Further, Figure 2, which appellant describes as the supporting

disclosure of hierarchical modulation, simply "illustrates the principle of hierarchical modulation which is specified as an option in the DVB-T standard, for example." (paragraph 0022). Given that compliance with the DVB-T standard is explicitly optional, being one of several possibilities, applying the type of hierarchical modulation found in the DVB-T standard is not a limitation which can be read into the claims from the specification.

Third, appellant argues that Nicolas does not teach wherein each stream is “configured to have a maximum range greater than at least one other hierarchically modulated data stream” as recited independent claims 45, 50, 56, and 59, citing that Nicolas teaches both streams are part of the same signal (appeal brief, page 17).

In response, the examiner must first note that it is contradictory to make the argument that one stream cannot be said to have a greater maximum range than another stream if they are simultaneously transmitted in the same signal right after attempting to narrow the definition of the claimed hierarchical modulation down to saying that the data streams are not only found in the same signal, but on the same frequency. Appellant attempts to clarify this argument by citing the example provided by Nicolas involves making the low priority stream dependent upon the high priority stream, and thus the range of the signal, as a whole, is the range at which both streams are receivable by a receiver (appeal brief, page 17). However, this does nothing to address the fact that Nicolas explicitly teaches the fact that the high priority data stream has a C/N threshold 5

dB lower than the C/N threshold of the standard priority data stream. This is not to be confused with the action C/N *ratios* themselves, where the high priority stream in fact has a higher C/N ratio [thus further range] given that it is a more highly powered carrier, the Nicolas document is simply a poorly drafted one, evidenced by the ample typographical errors. The C/N threshold is analogous to the 'C/N MIN' shown in fig. 3 of appellant's specification, where a lower threshold represents the fact that the stream can undergo more attenuation [go further] and still be a recoverable signal. This directly addresses the claim limitations that define the maximum range of a data stream to be the range at which the stream has "an adequate C/N ratio for reception by a terminal" (see for example, claim 45, lines 6-7). The C/N ratio of a stream is a clear indicator of the receivable range of said stream.

However, appellant then further makes an argument in an attempt to address the fact that regardless of whether the two streams may be necessary to create a finished viewable product by a receiver, this has no bearing on whether one stream has a greater maximum range than the other. Appellant argues that "power" does not necessarily equate to "power range", given that a signal bearing 100x the amount of data could have 10x the power but still be subject to significant enough transmission errors such that the range is less than the signal to which it is being compared. Appellant further argues that it appears as though Nicolas suggests configuring the streams to have the same range given that the

high priority stream is necessary to reproduce the standard priority stream (having the timing recovery information).

In response to appellant's hypothetical situations, it must be noted that the actual claim limitations being addressed is that a stream is configured to have a maximum range greater than another stream such that it provides an adequate C/N ratio for reception by a terminal. **As defined in the claims**, a stream with a higher C/N ratio is recoverable at a greater maximum range than a stream with the lower C/N ratio, regardless of the contents of the streams, since the configuring of the stream is to "provide an adequate C/N ratio for reception by the terminal". When one views the prior art, this feature is not only found, but found in abundance as a common practice in the art. The reference relied upon by the examiner, Nicolas, mentions this not as a fundamental aspect of his own invention, but when describing the known state of the art in his background, and directly addresses the issue of configuring streams such that one has a higher C/N ratio than another.

2. Independent claim 101

Here, appellant argues that neither Nicoloas, nor Gotwald or Banker, explicitly teach a "wireless device" as recited in claim 101, in addition to the rest of it's limitations.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the

rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, Gotwald includes a teaching where the distribution means for a broadband channel includes wireless means (Gotwald, col. 3, lines 48-50), requiring a wireless device for reception.

B. The Banker Document

Essentially, appellant's argument here is that Banker does not teach hierarchical modulation as asserted by the examiner, but rather serially transmits all data streams over a single channel (appeal brief, pages 20-22). However, in order to arrive at this conclusion, appellant makes an egregious mischaracterization of the Banker reference which directly contradicts what Banker actually teaches.

The cited section of Banker, col. 11, lines 1-17, identifies a set of data streams by number, 7, 8, and 9. Appellant correlates these identified streams with numbers 7, 8, and 9 shown in fig. 5(a), which shows the content of a single channel, and thus argues that the streams are all serially transmitted over a single channel (appeal brief, page 21). However, this has no actual support in the Banker reference. Banker describes what is shown in figs. 5(a)-(c) in col. 22, lines 44-61:

"Referring now to FIG. 5, the process for inserting and decoding data in the vertical blanking interval of a baseband video signal will now be described in

some detail. **Waveform 5a is a typical baseband video waveform showing standard NTSC composite synchronization, lines 7-11 after the beginning of the vertical blanking interval being identified**. PAL/SECAM and still to be determined high definition television synchronization formats are all related in providing some form of horizontal blanking interval and vertical blanking interval to permit a television receiver to move a scanning beam from one side of the image to the other or from the bottom to the top respectively. Consequently, in accordance with the present invention, the principles of providing an in-band video data signal at times not utilized for active video such as at certain blanked lines during the vertical blanking interval of the baseband video signal may be applied to any television format and the NTSC signal format is utilized by way of example only."

The identified numerals in fig. 5(a) are simply referring to individual ones of the standard 21 lines found in the VBI of an NTSC encoded video signal. There is absolutely no relation between the streams disclosed in col. 11, lines 1-17 of Banker with the standard VBI lines identified in fig. 5(a).

Further, the individual streams identified are disclosed as being addressed to different modulators (Banker, col. 11, lines 46-62), where different modulators are for different channels (Banker, col. 12, lines 30-54), showing that Banker clearly teaches modulating different streams onto different frequency portions of an outgoing transmission.

2. Combination with Gotwald

Here, appellant argues that Gotwald does not teach the claimed limitations because Gotwald includes a teaching that data types are prioritized by three distinct priority modules rather than being prioritized among each other (appeal brief, page 22).

In response, the claimed limitation being addressed is "transmitted data streams which respectively have a different priority assigned to the contents therein corresponding to a particular class of the content" (see for example, claim 45, lines 3-5). The cited section of Gotwald explicitly teaches "In some systems, it will be desirable to provide different data types with different priority levels." (Gotwald, col. 5, lines 7-8).

Lastly, appellant argues the queues are transmitted through a single broadband channel (appeal brief, page 22).

In response, Gotwald defines a broadband channel to comprise an entire distribution system (Gotwald, col. 3, lines 48-50), thus receiving content over a channel, as disclosed by Gotwald, simply means the content is received over a distribution network and says nothing about how the content has been modulated.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Dominic D Saltarelli/

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